

REMARKS/ARGUMENTS

Claims 1, 3-19, 24-25 and 35 stand rejected under 35 U.S.C. 102(b) as being anticipated by Meltser et al. The remaining, pending claims, namely claims 20-23 and 26-30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Meltser et al. and further in view of Mizuno.

These rejections are respectfully traversed. As detailed below, it is submitted that the Examiner has misconstrued the pending claims and failed to properly apply the anticipation standard required under 35 U.S.C. 102(b).

Notice of Appeal

As this is a Response after final, a Notice of Appeal, without a fee is attached. Further action will be taken on an Appeal, once Examiner's response to this Office Action reply is received.

Anticipation Standard Under 35 U.S.C. 102(b)

The Examiner is respectfully referred to MPEP 2131, which details your requirements for a reference to anticipate a claim. Thus, the first citation in this section of MPEP is:

"A claim is anticipated only if each and every element as set forth in the claim is found, either in expressly or inherently described, in a single prior art reference". *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Thus, fundamentally, a citation under 35 U.S.C. 102(b) must disclose "each and every element" of a claim. It may not be necessary for there to be exact correspondence in the language used, but each element must be found in the cited reference. There are rare circumstances where a secondary reference can be used, but this is simply to clarify a primary reference, e.g. with respect to: proving that the primary

reference contains an "enable disclosure"; explaining the meaning of a term in the primary reference; or showing that a characteristic is inherent in the primary reference (see MPEP 2131.01). None of these exceptions apply in this case.

Claim 1 of the present application was amended in the previous Response filed April 24, 2006 to define the controller, in element (e), as follows:

(e) a controller for controlling the first reactant supply means to provide an additional amount of the first reactant to the fuel cell cathode based on the fuel cell state variable, and for controlling the second reactant supply means to provide an additional amount of the second reactant to the fuel cell anode based on the fuel cell state variable, whereby flooding occurring in either one of the anode and cathode is displaced by the additional amounts of the first and second reactants.

Thus, it is now clearly specified that the controller provides both an additional amount of the first reactant and an additional amount of the second reactant, to displace flooding from both the anode and cathode sides of the fuel cell.

If one considers the Meltser et al. reference, this clearly teaches no such characteristic. Rather, Meltser et al. teaches remarkably little about dealing with the flooding problem, and any mention of flooding is incidental. One can note the passage at column 8, lines 25 and 26 which refers to actions to be taken if there is a hydrogen bridging alert, and these include, for example, "throttling back on the hydrogen pressure, or increasing the cathode gas pressure, inter alia". It can only be assumed that this is the passage that provides the basis for the Examiner's argument that Meltser et al. provides that: "Corrective action may entail a decrease in hydrogen supply or an increase in cathode supply". One can further note that the sentence at the end of this paragraph in column 8, lines 36-38, provides: "H₂O flooding, on the other hand may be mitigated by flowing excess air through the cathode flow channel."

It is therefore argued that, in relation to a flooding condition, Meltser et al. teaches only that excess air be passed through the cathode side; there is no express

teaching of what action to take on the anode side. There is reference in Meltzer et al. that, for other conditions, action taken can include "throttling back" the hydrogen supply. There is no, and we would emphasize this point, teaching in Meltzer et al. of increasing the hydrogen supply, for any condition.

It can be noted that, in the context of flooding, the teaching appears to be that one needs to: (1) take action to reduce the flooding on the cathode side; and (2) take action to reduce the reaction rate, since the reaction generates more water which can worsen the flooding situation. Thus, the teaching appears to be to increase the flow rate on the cathode side to displace the flooding on the cathode side, while simultaneously reducing the hydrogen supply, thereby to reduce the rate of generation of further water.

In contrast, the teaching of the present invention is directly contrary to this. The present inventors take the approach that, to eliminate flooding, it is desirable to increase the flow rate on both the anode and cathode sides of the cell or cell stack. Increasing flow rates may increase the reaction rate and hence generation of moisture. On the other hand, this can be restricted, through the back voltage present across the anode and cathode. Alternatively, if the flow rates were increased enough, these will overcome any additional generation of water. Further, additional power generated can be used to power blowers necessary for the increased flow rate of the reactants.


Accordingly, it is submitted that the Examiner's analysis and rejection of the claims does not comply with the requirements of 35 U.S.C. 102 and the Examiner is requested to withdraw this rejection. It is noted that the Examiner's arguments in the final Action appear to be largely a restatement of arguments from the previous Action. In particular, it is noted that these arguments fail to take into account the fact that the main claim, claim 1 now requires increase in the flow rate of both reactants. Further, the Examiner's argument that the corrective action in Meltzer et al. "may entail a decrease in hydrogen supply..." is a clear acknowledgement that Meltzer et al. teach away from the present invention.

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Accordingly, early review and allowance are requested.

Respectfully submitted,

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